

# Jefferson County Dept. of Health (AL)

## 2015 Network Plan Summary & EPA Preliminary Determination

### 1 QUICK SUMMARY OF CHANGES INCORPORATED FROM THE 2014 PLAN

---

- Addition of Near Road Monitoring Site at Arkadelphia Road
  - EPA worked with JCDH to establish their near-road site. It was approved. This site will have the following regulatory monitors: Nitrogen Dioxide, Carbon Monoxide and Particulate Matter less than 2.5 microns.
- EPA Region 4 approved the discontinuation of Low Vol PM10 monitoring at Tarrant, Fairfield, Shuttlesworth and McAdory ambient air monitoring sites which were proposed in last year's plan.
  - PM10 monitoring is eliminated at the Fairfield & McAdory sites (AQS Site #'s: 01-073-1003 & 01-073-1005)
  - These two sites measure among the lowest PM10 concentrations in the county and shutting down these monitors does not compromise data collection needed for implementation of a NAAQS. Also, the requirements of 40 CFR Part 58 Appendix D will continue to be met. [B][C]
  - The other two sites will maintain regulatory PM10 continuous monitoring: Tarrant & Shuttlesworth (AQS Site #'s: 01-073-6002 & 01-073-6004).
    - Continuous instruments provide near real-time data and they offer a resource savings to the agency in terms of staff time, decreased colocation requirements, and lab costs.
  - Jefferson County will still have five sites with regulatory PM10 monitoring.
  - At this time, the Shuttlesworth PM10 monitor is considered the max concentration monitor in the CBSA and cannot be discontinued.[D] EPA may recommend in our response to the plan submitted in 2015 that JCDH begin reporting PM10 continuous data to the AirNow network effective January 1, 2016.

### 2 QUICK SUMMARY OF CHANGES PROPOSED IN THE 2015 PLAN

---

- Discontinuation of PM2.5 and CO at Shuttlesworth.
  - The special purpose PM2.5 monitor located at the Shuttlesworth site was a short term monitor which operated for less than two years. Prior EPA approval to shut down this monitor was not required per 40 CFR §58.20.

- The CO monitor is a long term monitor and has been recording very low concentrations since 2010 after the mineral wool production was shut down at Walter Coke [E]. This monitor would meet the requirements for discontinuation per 40 CFR §58.14(c)(1) and (2). There will remain three active CO monitoring sites in Jefferson County. These three sites are all required at this time and cannot be shut down (AQS ID #'s: 01-073-0023, 01-073-1003, and 01-073-2059). EPA will require JCDH restart CO monitoring efforts at the Shuttlesworth site should Walter Coke restart mineral wool production again.
  - The EPA may recommend that JCDH install a continuous PM2.5 TEOM at Shuttlesworth and report the data to AirNow effective January 1, 2016. While these data will not be regulatory, they will be useful in informing the overall AirNow mapping service.
- Variance/Exclusion request from using the PM2.5 continuous FEM data at the North Birmingham site for NAAQS purposes.
    - A NAAQS Exclusion waiver request was included in this year's plan for a NAAQS exclusion of the data from their PM2.5 continuous FEM sampler located at the North Birmingham site (AQS ID # 01-073-0023).
    - Staff have preliminarily reviewed the request and are uncertain whether the region can approve this exclusion at this time. The next page shows the statistics derived from a comparison of the data from the regulatory PM2.5 FRM vs their FEM (Thermo 5014i) at the North Birmingham site. [A]
    - Based on this statistical summary, the FEM data would be considered comparable to both the daily and annual PM2.5 NAAQS.
    - Further discussions may be necessary to provide a final determination on this request.

### 3 STAFF CONTACT

---

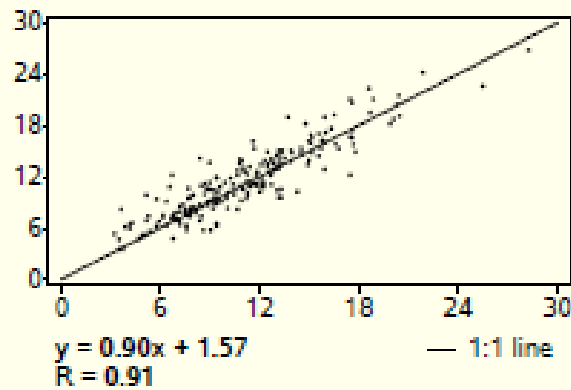
- Darren Palmer, x29052

# PM2.5 Comparability Assessment [A]

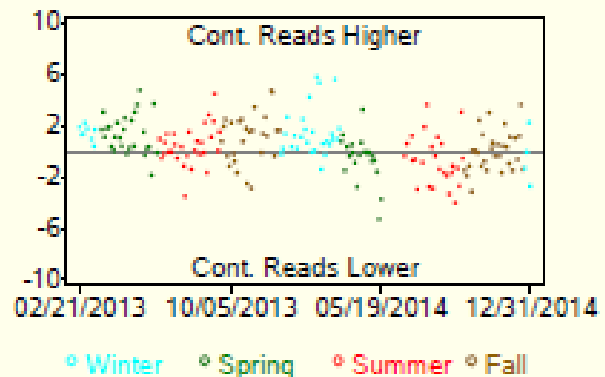
## PM<sub>2.5</sub> Continuous Monitor Comparability Assessment Site 01-073-0023: Birmingham, AL

FRM: BGI Models PQ200-VSCC or PQ200A-VSCC - Gravimetric (142,116), PM2.5 - Local Conditions (88101), POC=1  
Cont: Thermo Scientific 5014; or FH62C14-DHS w/VSCC - Beta Attenuation (183), PM2.5 - Local Conditions (88101), POC=3

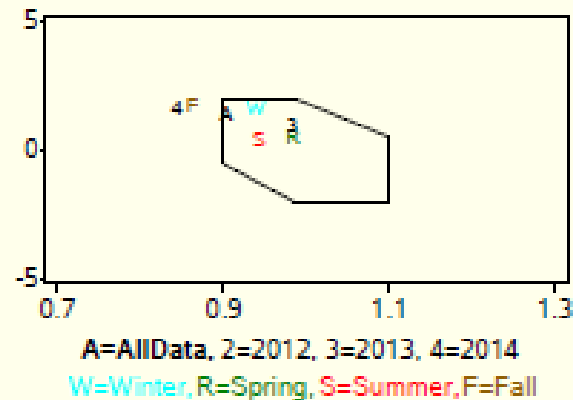
Cont. (y) vs. FRM (x) PM<sub>2.5</sub> (μg/m<sup>3</sup>)



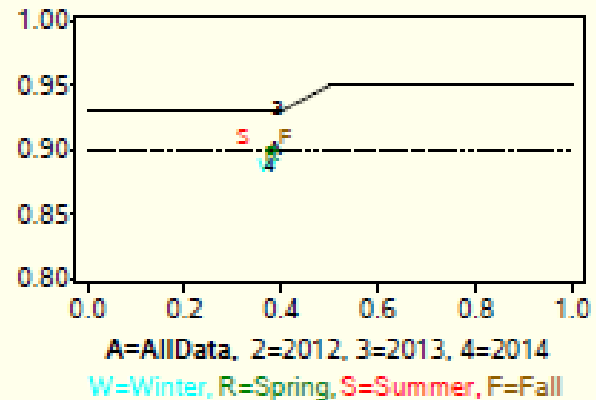
Cont. minus FRM PM<sub>2.5</sub> (μg/m<sup>3</sup>)



Additive (y) vs. Multiply (x) Bias



R (y) vs. FRM CCV (x)



Mean PM<sub>2.5</sub> (μg/m<sup>3</sup>)

Dataset	N	FRM	Cont	Ratio (Cont/FRM)
AllData	199	11.1	11.6	1.04
Winter	39	9.7	11.0	1.13
Spring	48	10.3	10.9	1.05
Summer	55	13.1	13.0	0.99
Fall	57	10.7	11.2	1.05
2012	0	-	-	-
2013	95	10.8	11.8	1.09
2014	104	11.4	11.4	1.00

Appendix A Statistics

Dataset	N	Bias (all observations)	N	Bias (only > 3 μg/m <sup>3</sup> )
AllData	199	7.4	199	7.4
Winter	39	16.0	39	16.0
Spring	48	6.9	48	6.9
Summer	55	-0.4	55	-0.4
Fall	57	9.3	57	9.3
2012	0	-	-	-
2013	95	12.2	95	12.2
2014	104	3.0	104	3.0

Fairfield PM10 concentration plot (approved shutdown) [B]

*The Fairfield monitor measured PM10 concentrations well below the standard.*

### Daily Mean PM10 Concentrations from 01/01/00 to 12/31/14

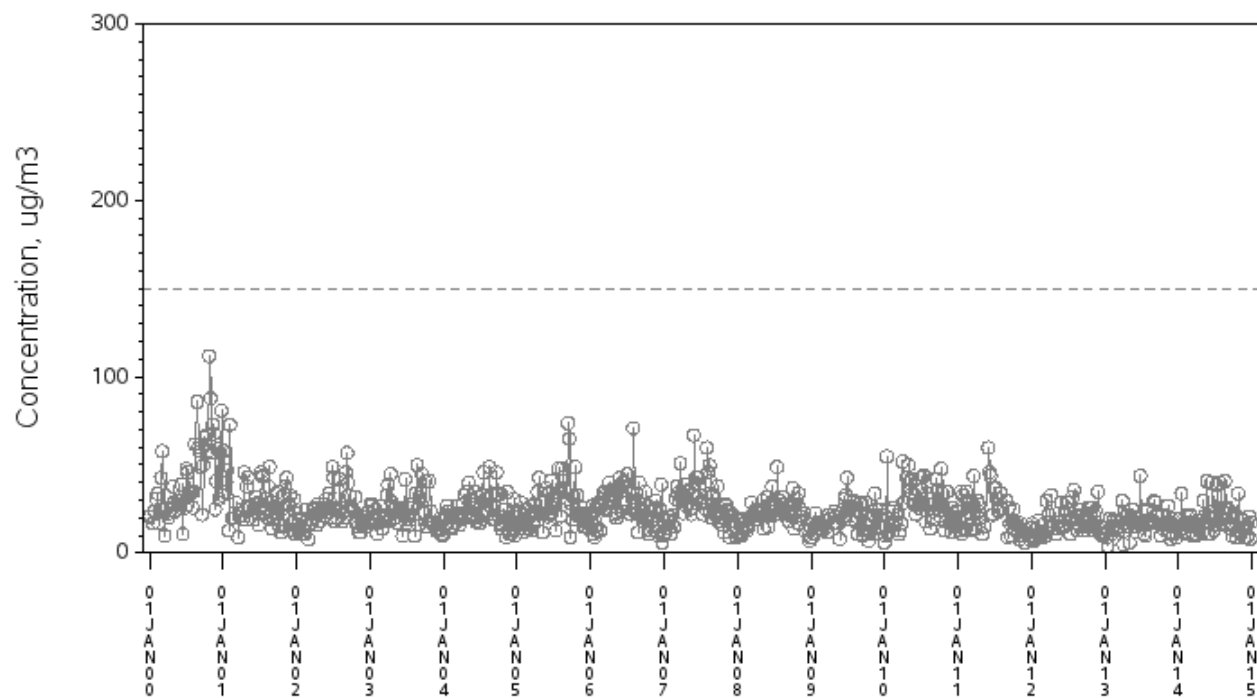
Parameter: PM10 Total 0-10um STP (Applicable standard is 150 ug/m3)

CBSA: Birmingham-Hoover, AL

County: Jefferson

State: Alabama

AQS Site ID: 01-073-1003, poc 1

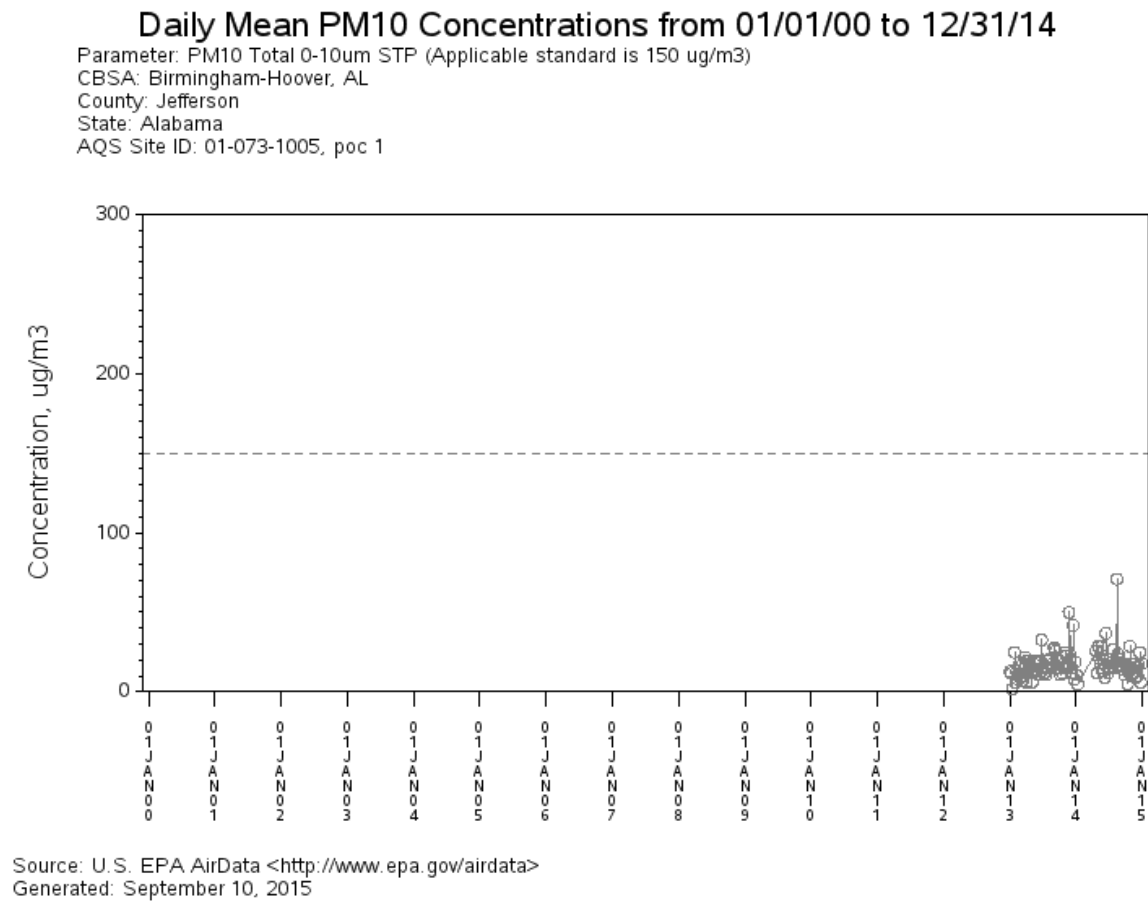


Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: September 10, 2015

McAdory PM10 concentration plot (approved shutdown) [C]

*The McAdory monitor measured PM10 concentrations well below the standard.*



## Shuttlesworth PM10 Concentration (max concentration site) [D]

*At this time, the Shuttlesworth PM10 monitor is considered the max concentration monitor in the CBSA.*

### Daily Mean PM10 Concentrations from 01/01/00 to 12/31/14

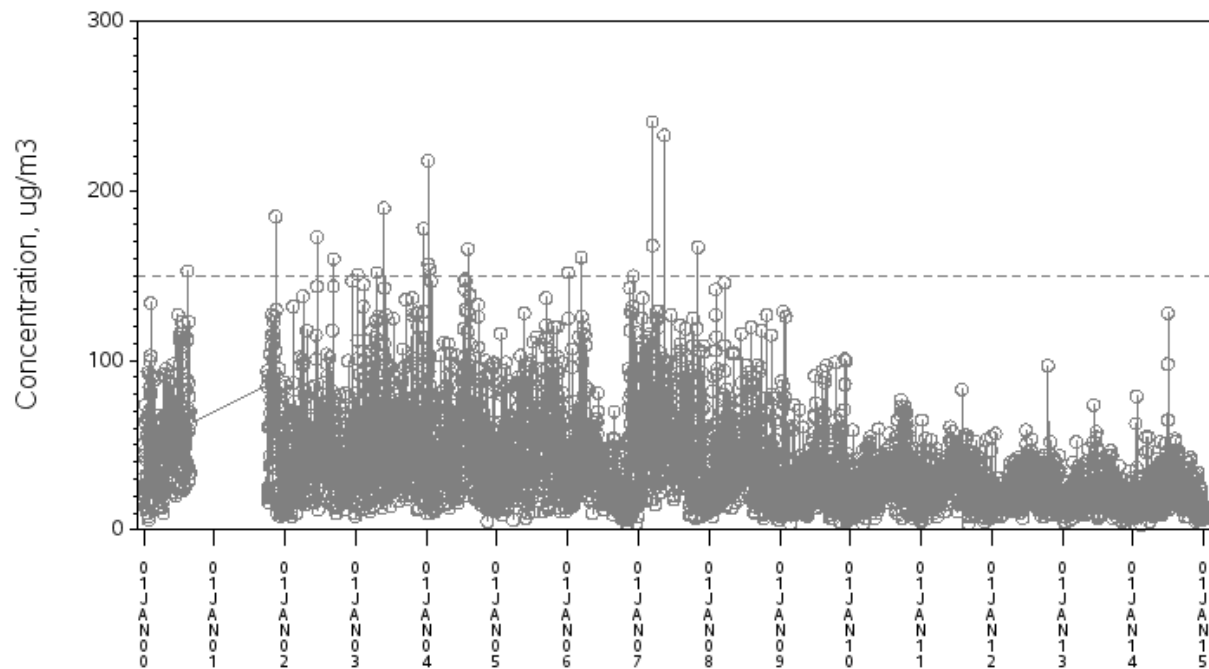
Parameter: PM10 Total 0-10um STP (Applicable standard is 150 ug/m3)

CBSA: Birmingham-Hoover, AL

County: Jefferson

State: Alabama

AQS Site ID: 01-073-6004, poc 1



Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: September 10, 2015

Shuttlesworth CO concentration plot (CO monitor approved for shutdown) [E]

*This CO monitor is recording very low concentrations now and it is obvious from the data when the mineral wool production aspect was shut down at Walter Coke.*

### Daily Max 8-hour CO Concentrations from 01/01/00 to 12/31/15

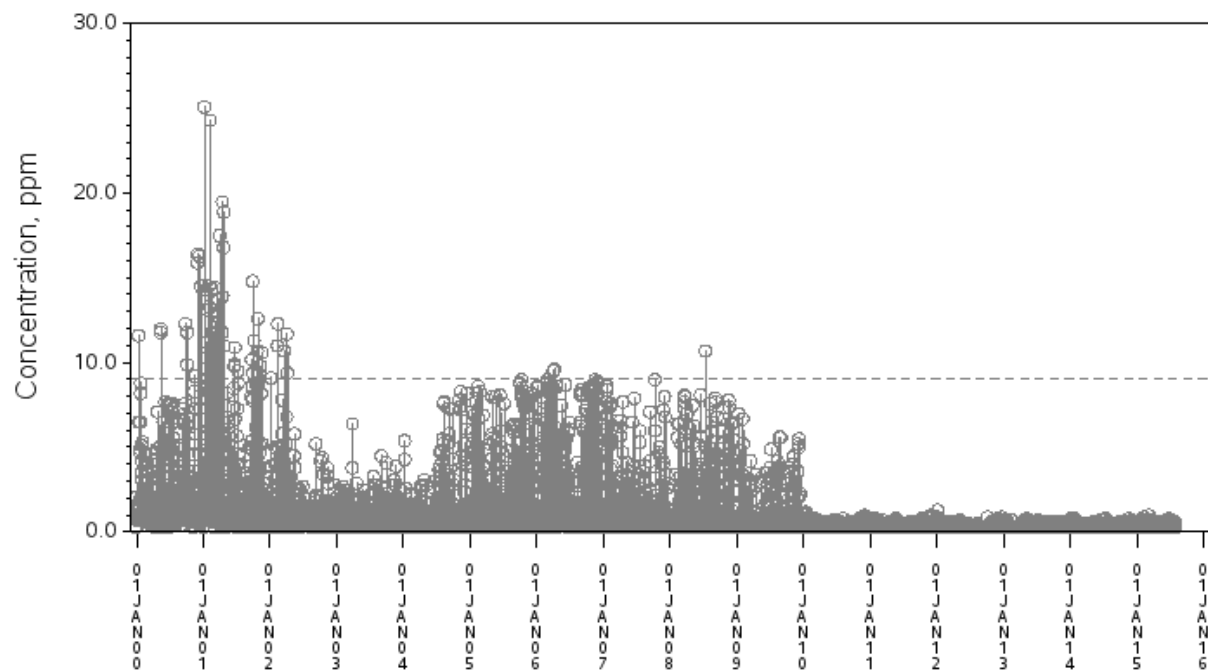
Parameter: Carbon monoxide (Applicable standard is 9 ppm)

CBSA: Birmingham-Hoover, AL

County: Jefferson

State: Alabama

AQS Site ID: 01-073-6004, poc 1



Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: September 10, 2015